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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,354	09/24/2003	Saed Sayad	059108-0001	4714

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Miller Thomson LLP

EXAMINER	
HIRL, JOSEPH P	
ART UNIT	PAPER NUMBER
2129	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No.	Applicant(s)	
	10/668,354	SAYAD, SAED	
	Examiner	Art Unit	
	Joseph P. Hirl	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

The amendment document filed on 20 May 2008 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
  - ☐ A. Amended paragraph(s) do not include markings.
  - ☐ B. New paragraph(s) should not be underlined.
  - ☐ C. Other _____.
- ☐ 2. Abstract:
  - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
  - ☐ B. Other _____.
- ☐ 3. Amendments to the drawings:
  - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
  - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
  - ☐ C. Other _____.
- ☐ 4. Amendments to the claims:
  - ☐ A. A complete listing of all of the claims is not present.
  - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
  - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
  - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
  - ☐ E. Other: _____.
- ☒ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4):
  Documents that were faxed are unreadable. Please retransmit the response.

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment or an amendment filed after allowance. If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a *Quayle* action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

   Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

   Failure to timely respond to this notice will result in:
   Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or
   Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

/Joseph P. Hirl/ Primary Examiner, Art Unit 2129	

Auto-Reply Facsimile Transmission

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CERTIFICATE OF TRANSMISSION

Our file:	059108.0001/sgf
Invention:	Method And Apparatus For Data Analysis
Filing Date:	August 5, 2003
Application No.:	10/668,354
Inventor:	Saed Sayad
Country:	United States
Examiner:	Hirl, Joseph P.
Art Unit:	2120
Due Date:	May 20, 2008
Subject:	Filing of Office Response prepared by Eugene J.A. Gierczak (totalling 24 pages including this certificate page)

I hereby certify that this correspondence is being facsimiled to the Patent and Trademark Office Fax No 571 273 8300 on May 20, 2008

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CERTIFICATE OF TRANSMISSION

Our file:	**059108-0001/adf**
Invention:	**Method And Apparatus For Data Analysis**
Filing Date:	**August 5, 2004**
Application No.:	**10/668,354**
Inventor:	**Saed Sayad**
Country:	**United States**
Examiner:	**Hirl, Joseph P.**
Art Unit:	**2129**
Due Date:	**May 20, 2008**
Subject:	**Filing of Office Response prepared by Eugene J.A. Gierczak (totalling 24 pages including this certificate page)**

I hereby certify that this correspondence is being facsimiled to the Patent and Trademark Office Fax No.571.273.8300 on May 20, 2008.

Jennifer Hendzel

Printed name of person signing this certificate

Signature

IN THE UNITED STATES PATENT AND TRADEMARKS OFFICE

May 20, 2008

Re:	**Our File:**	**059108-0001**
	Invention:	**METHOD AND APPARATUS FOR DATA ANALYSIS**
	Application No.:	**10/668,354**
	Filed:	**August 5, 2004**
	Country:	**United States**
	Inventor:	**Saed Sayad**
	Examiner:	**Hirl, Joseph P.**
	Art Unit:	**2129**
	Due Date:	**May 21, 2008**

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450
U.S.A.

Dear Sir/Madams:

Agent for Applicant acknowledges receipt of the Notice of Non-Compliant Amendment dated April 21, 2008 and responds as follows:

The corrected **Amendments to the claims** are reflected in the listing of claims which begins on page **2** of this paper.

Remarks/Arguments begin on page **11** of this paper, however the Remarks/Arguments have not been substantively modified in relation to those filed February 14, 2008.

IN THE CLAIMS:

Agent for Applicant requests that the following amendments be made to the claims without adding any new subject matter. Additions to the claims are underlined while deletions from the claims are enclosed in double square brackets.

1. (Previously presented) A computer implemented system for enabling data analysis comprising:

A computer linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements; and

An analytical engine, linked to or executed by the computer, that is operable to enable intelligent modeling, by the analytical engine applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables wherein the analytical engine includes a data management system for accessing and processing the knowledge elements.

2. (Original) The computer implemented system claimed in claim 1, wherein the analytical engine defines one or more knowledge entities, each of which is comprised of at least one knowledge element.

3. (Original) The computer implemented system as claimed in claim 2, wherein the analytical engine is adapted to update dynamically the knowledge elements with a plurality of records and a plurality of variables.

4. (Original) The computer implemented system claimed in claim 2, wherein the knowledge entity consists of a data matrix having a row and a column for each variable, and wherein the knowledge entity accumulates sets of combinations of knowledge elements for each variable in the intersection of the corresponding row and column.

5. (Original) The computer implemented system as claimed in claim 4, wherein the analytical engine enables variables and/or records to be dynamically added to, and subtracted from, the knowledge entity.

6. (Original) The computer implemented system claimed in claim 5, wherein the analytical engine enables the deletion of a variable by deletion of the corresponding row and/or column, and wherein the knowledge entity remains operative after such deletion.

7. (Original) The computer implemented system claimed in claim 5, wherein the analytical engine enables the addition of a variable by addition of a corresponding row and/or column to the knowledge entity, and wherein the knowledge entity remains operative after such addition.

8. (Original) The computer implemented system claimed in claim 5, wherein an update of the knowledge entity by the analytical engine does not require substantial re-training or re-calibration of the knowledge elements.

9. (Original) The computer implemented system claimed in claim 2, wherein the analytical engine enables application to the knowledge entity of one or more of: incremental learning operations, parallel processing operations, scenario testing operations, dimension reduction operations, dynamic query operations or distributed processing operations.

10. (Previously presented) A computer implemented system for enabling data analysis comprising:

a) A computer linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements; and

b) An analytical engine, linked to or executed by the computer to enable intelligent modeling, by the analytical engine applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables, wherein the analytical engine is linked to a data management system for accessing and processing the knowledge elements.

11. (Previously presented) A method of data analysis comprising:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements, the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge

elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables; and

b) Applying the intelligent modeling to the knowledge elements for data analysis.

12. (Previously presented) A method of enabling parallel processing, comprising the steps of:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements, the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables;

b) Subdividing one or more databases into a plurality of parts and calculating a knowledge entity for each part using the same or a number of other computers to accomplish the calculations in parallel;

c) Combining all or some of the knowledge entities to form one or more combined knowledge entities; and

d) Applying the intelligent modeling to the knowledge elements of the combined knowledge entities so as to engage in data analysis.

13. (Previously presented) A method of enabling scenario testing, wherein a scenario consists of a test of a hypothesis, comprising the steps of:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more of data sources adapted to provide to the computer a plurality of knowledge elements, the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables, wherein the analytical engine is responsive to introduction of a hypothesis to create dynamically one or more new intelligent models; and

b) Applying the one or more new intelligent models to see future possibilities, obtain new insights into variable dependencies as well as to assess the ability of the intelligent models to explain data and predict outcomes.

14. (Previously presented) A method of enabling dimension reduction, comprising the steps of:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements, the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables; and

b) Reducing the number of variables in a knowledge entity that includes the one or more of the plurality of knowledge elements by the analytical engine defining a new variable based on the combination of any two variables, and applying the new variable to the knowledge entity.

15. (Original) The method as claimed in claim 14, further comprising the step of successively applying a series of new variables so as to accomplish further dimension reduction.

16. (Previously presented) A method of enabling dynamic queries:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements, the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables;

b) Establishing a series of questions that are directed to arriving at one or more particular outcomes; and

c) Applying the analytical engine so as to select one or more sequences of the series of questions based on answers given to the questions, so as to rapidly converge on the one or more particular outcomes.

17. (Previously presented) A method of enabling distributed processing:

a) Providing an analytical engine, linked to or executed by a computer, the computer being linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements the analytical engine being operable to enable intelligent modeling, by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables, wherein the analytical engine includes a data management system for accessing and processing the knowledge elements, whereby the analytical engine enables the combination of a plurality of knowledge entities into a single knowledge entity; and

b) Applying the intelligent modeling to the single knowledge entity.

18. (Original) The computer-implemented system claimed in claim 1, wherein the analytical engine:

a) Enables one or more records to be added or removed dynamically to or from the knowledge entity;

b) Enables one or more variables to be added or removed dynamically to or from the knowledge entity;

c) Enables use in the knowledge entity of one or more qualitative and/or quantitative variables; and

d) Supports a plurality of different data analysis methods.

19. (Original) The computer-implemented system claimed in claim 18, wherein the knowledge entity is portable to one or more remote computers.

20. (Currently amended) The computer-implemented system claimed in claim 1, wherein the intelligent modeling applied to relevant knowledge elements enables one or more of:

a) credit scoring;

b) predicting portfolio value from market conditions and other relevant data;

c) credit card fraud detection based on credit card usage data and other relevant data;

d) process control based on data inputs from one or more process monitoring devices and other relevant data;

e) consumer response analysis based on consumer survey data, consumer purchasing behaviour data, demographics, and other relevant data;

f) health care diagnosis based on patient history data, patient diagnosis best practices data, and other relevant data;

g) security analysis predicting the identity of a subject from biometric measurement data and other relevant data;

h) inventory control analysis based on customer behaviour data, economic conditions and other relevant data;

i) sales prediction analysis based on previous sales, economic conditions and other relevant data;

j) computer game processing whereby the game strategy is dictated by the previous moves of one or more other players and other relevant data;

k) robot control whereby the movements of a robot are controlled based on robot monitoring data and other relevant data; and

l) A customized travel analysis whereby the favorite destination of a customer is predicted based on previous behavior and other relevant data . [[; and]]

21. (Previously presented) A computer program product for use on a computer system for enabling data analysis and process control comprising:

a) a computer usable medium; and

b) computer readable program code recorded on the computer useable medium, including:

i) program code that defines an analytical engine that is operable to link to one or more data sources adapted to provide a plurality of knowledge elements wherein the analytical engine is further operable to enable intelligent modeling based on one or more of the plurality of knowledge elements by applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii)

purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables.

22. (Original) The computer program product as claimed in claim 21, where the program code defining the analytical engine instructs the computer system to define one or more knowledge entities, each of which is comprised of at least one knowledge element.

23. (Original) The computer program product as claimed in claim 22, wherein the program code defining the analytical engine instructs the computer system to update dynamically the knowledge elements with a plurality of records and a plurality of variables.

24. (Original) The computer program product as claimed in claim 22, wherein the program code defining the analytical engine instructs the computer system to establish the knowledge entity so as to consist of a data matrix having a row and a column for each variable, and wherein the knowledge entity accumulates sets of combinations of knowledge elements for each variable in the intersection of the corresponding row and column.

25. (Original) The computer program product as claimed in claim 24, wherein the program code defining the analytical engine instructs the computer system to enable variables and/or records to be dynamically added to, and subtracted from, the knowledge entity.

26. (Original) The computer program product as claimed in claim 25, wherein the program code defining the analytical engine instructs the computer system to enable the deletion of a variable by deletion of the corresponding row and/or column, and wherein the knowledge entity remains operative after such deletion.

27. (Original) The computer program product claimed in claim 25, wherein the program code defining the analytical engine instructs the computer system to enable the addition of a variable by addition of a corresponding row and/or column to the knowledge entity, and wherein the knowledge entity remains operative after such addition.

28. (Original) The computer program product claimed in claim 25, wherein the program code defining the analytical engine instructs the computer system to enable the update of the knowledge entity without substantial re-training or re-calibration of the knowledge elements.

29. (Original) The computer program product claimed in claim 22, wherein the program code defining the analytical engine instructs the computer system to enable application to the

knowledge entity of one or more of: incremental learning operations, parallel processing operations, scenario testing operations, dimension reduction operations, dynamic query operations or distributed processing operations.

30. (Original) A computer-implemented system as claimed in claim 1, wherein the analytical engine enables process control.

31. (Original) The computer-implemented system as claimed in claim 30, wherein the analytical engine enables fault diagnosis.

32. (Currently amended) A method according to claim 11, wherein the method is implemented in a digital signal processor chip or [[any]] a miniaturized processor medium.

33. (Withdrawn) The computer implemented system claimed in claim 1, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

34. (Withdrawn) The computer implemented system claimed in claim 33, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

35. (Withdrawn) The computer implemented system claimed in claim 10, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

36. (Withdrawn) The computer implemented system claimed in claim 35, wherein the dynamic adaptation consists of the analytical engine dynamically applying the intelligent characteristics to the knowledge elements.

37. (Withdrawn) The method of data analysis claimed in claim 36, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

38. (Withdrawn) The method of data analysis claimed in claim 37, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

39. (Withdrawn) The method of enabling parallel processing claimed in claim 12, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

40. (Withdrawn) The method of enabling parallel processing claimed in claim 39, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

41. (Withdrawn) The method of enabling scenario testing claimed in claim 13, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

42. (Withdrawn) The method of enabling scenario testing claimed in claim 41, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

43. (Withdrawn) The method of enabling dimension reduction claimed in claim 14, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

44. (Withdrawn) The method of enabling dimension reduction claimed in claim 14, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

45. (Withdrawn) The method of enabling dynamic queries claimed in claim 16, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

46. (Withdrawn) The method of enabling dynamic queries claimed in claim 16, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

47. (Withdrawn) The method of enabling distributed processing claimed in claim 17, wherein the analytical engine is operable to dynamically adapt to changes in the knowledge elements.

48. (Withdrawn) The method of enabling distributed processing claimed in claim 17, wherein the intelligent characteristics can be utilized substantially on-line and/or in substantially real time.

REMARKS

Agent for Applicant presents original claims 2-9, 15, 18-19 and 22-31; previously amended claims 1, 10-14, 16, 17 and 21; currently amended claims 20 and 32; and withdrawn claims 33-48 for reconsideration by the Examiner.

Claim Withdrawals

The Examiner stated that claims 33 to 48 were withdrawn from consideration as being directed to a non-elected invention pursuant to 37 CFR 1.142(b) and MPEP § 821.03.

Agent for Applicant acknowledges the Examiner's statement that claims 33 to 48 are withdrawn from consideration. No comment on claims 33 to 48 is therefore made at this time, without prejudice to later filing a continuation application claiming priority to the present application and/or later arguing that the claims 33 to 48 do not relate to a materially different process.

Claim Rejections and Claim Amendments

Lacking Patentable Utility

Claims 4-8 and 24-28

The Examiner stated that claims 4-8 and 24-28 were rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. More specifically, the Examiner stated:

> Claim 4 cited a "data matrix having a row and a column for each variable." Such a limitation creates an identity matrix where the input is identical to the output since the same variable represents both a row and a column. Hence the "knowledge entity accumulation of combination of knowledge elements for each variable in the intersection of the corresponding row and column" will have no knowledge. Hence claim 4 has no utility or value...

Agent for Applicant respectfully submits that the Examiner's objection is based on a misunderstanding of what is meant by a "data matrix" in the present application. In the present application, a "data matrix" is not merely a listing of variable values and also is not an identity matrix. An example of a "data matrix" used in the present application is given at paragraph 40 of the specification, which presently reads:

[0040] The learner 44 transforms the collected data into the knowledge entity of FIG. 3 as each measurement is received. As can be seen in FIG. 3, the knowledge entity 46 is organised as an orthogonal matrix having a row and a column for each of the sensed operating parameters. The intersection of each row and column defines a cell in which a set of combinations of the variable in the respective row and column is accumulated.

Figure 3 presently appears as follows:

	X_1	X_2	X_3	X_4
X_1	n_{11} $\sum X_1$ $\sum X_1$ $\sum X_1X_1$	n_{12} $\sum X_1$ $\sum X_2$ $\sum X_1X_2$	n_{13} $\sum X_1$ $\sum X_3$ $\sum X_1X_3$	n_{14} $\sum X_1$ $\sum X_4$ $\sum X_1X_4$
X_2	n_{21} $\sum X_2$ $\sum X_1$ $\sum X_2X_1$	n_{22} $\sum X_2$ $\sum X_2$ $\sum X_1X_2$	n_{23} $\sum X_2$ $\sum X_3$ $\sum X_2X_3$	n_{24} $\sum X_2$ $\sum X_4$ $\sum X_2X_4$
X_3	n_{31} $\sum X_3$ $\sum X_1$ $\sum X_3X_1$	n_{32} $\sum X_3$ $\sum X_2$ $\sum X_3X_2$	n_{33} $\sum X_3$ $\sum X_3$ $\sum X_3X_3$	n_{34} $\sum X_3$ $\sum X_4$ $\sum X_3X_4$
X_4	n_{41} $\sum X_4$ $\sum X_1$ $\sum X_4X_1$	n_{42} $\sum X_4$ $\sum X_2$ $\sum X_4X_2$	n_{43} $\sum X_4$ $\sum X_3$ $\sum X_4X_3$	n_{44} $\sum X_4$ $\sum X_4$ $\sum X_4X_4$

Figure 3

As can be seen in the above Figure 3, the data matrix may be neither merely a listing of variable values nor an identity matrix. Further examples in the description of data matrices implementing the knowledge entities of the present invention include Table 2 (referred to as paragraph 47 of the specification), Table 6 (referred to at paragraph 75), and Table 9 (referred to at paragraph 86 of the specification).

Therefore, Agent for Applicant respectfully submits that it is inaccurate that "knowledge entity accumulation of combination of knowledge elements for each variable in the intersection of the corresponding row and column" will have no knowledge. As such, claims 4-8 and 24-28 are in allowable form as they do not lack utility or value. The utility or value clearly resides in the ability to update the knowledge elements given the specific knowledge entity structure that is described, which is highly novel and unobvious.

Claim 32

The Examiner stated that claim 32 was rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. More specifically, the Examiner stated that limiting the method to "any miniaturized processor medium" preempts the idea of "miniaturized processor medium".

Agent for Applicant has amended claim 32 to remove the reference to "any miniaturized processor medium" in the above amended claims. Agent for Applicant respectfully submits that the claim no longer preempts ideas and, therefore, is now in allowable form.

Failure to Disclose Practical Application

The Examiner stated that claims 4-8, 24-28, and 20-21 were rejected under 35 U.S.C. 112. More specifically claims 4-8 and 24-28 were rejected because, as a matter of law, claims rejected under 35 U.S.C. 101 are also rejected under 35 U.S.C. 112.

Claims 4-8 and 24-28

Agent for Applicant submits that because of the above arguments under the heading "Lacking Patentable Utility", claims 4-8 and 24-28 are allowable under 35 U.S.C. 101 and, therefore, under 35 U.S.C. 112.

Claims 20-21

The Examiner stated that claims 20-21 were rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Examiner noted that connecting the two claims by the term "and" rendered both claims indefinite.

Agent for Applicant has amended claim 20 such that claims 20 and 21 are no longer connected by the term "and". Agent for Applicant respectfully submits, therefore, that the claims are no longer indefinite and are now in allowable form.

Anticipation

The Examiner stated that claims 1-3, 9-23, and 29-33 were rejected under 35 U.S.C. 102(b) as being anticipated by Amado (US 5,701,400).

Agent for Applicant respectfully submits that Amado and the present invention are directed at completely different inventions that each serve a different purpose. The two inventions do not overlap, but rather provide complementary systems and methods that may, in fact, be used in conjunction. Furthemore, Amado does not constitute analogous art.

Agent for Applicant submits that Amado is directed towards an "information compiler" system, as reflected in the title of Amado, which is "Method and Apparatus for Applying If-Then-Else Rules to Data Sets in a Relational Data Base and Generating from the Results of Application of Said Rules a Database of Diagnostics Linked to Said Data Sets to Aid Executive Analysis of Financial Data." The term "information compiler" is further described in Amado at column 24, lines 43 through 59, where Amado notes that "The invention could be described as an INFORMATION COMPILER" and that an information compiler is used for "applying logic tests". Therefore, Amado is describing a compilation system which presupposes the existence of appropriate "logic tests". These logic tests could be supplied by Sayad.

Furthermore, Amado at column, 25, lines 8 through 34 notes that the invention is concerned with generating a database of diagnostics from the data and linking the diagnostics to the corresponding data. For example, at column 25, lines 15 through 19, Amado contemplates that "appropriate knowledge logic" must be provided by a source outside the scope of the Amado invention. Again, Amado presupposes the existence of "appropriate knowledge logic" which could be supplied by Sayad.

To summarize, Amado is concerned generally with providing a comprehensive computer implemented system to assist decision making (see Amado at column 20, lines 40 through 43).

In contrast, Sayad is concerned generally with an intelligent learning utility that may be used to make intelligent models that may enable data processing in dynamic situations and large quantities of data. In fact, Sayad proposes that the results of intelligent models could be used for control or diagnostic purposes (see Sayad at paragraph 280). The present direction is not directed at a specific use of the results of implementation of such intelligent models, whereas Amado is clearly directed to specific use of data from multiple sources, including possibly data resulting from implementation of intelligent models not disclosed in Amado. For example, they may just indicate a "red flag" as alluded to by Amado in methods outside the scope of Amado (see Amado at column 20, lines 21 through 32) or they may be used in Amado as diagnostics.

In other words, the way the results of the intelligent models are used for control or diagnostic purposes is beyond the scope of Sayad but is the central topic of Amado.

This difference is illustrated at various points in Amado and Sayad.

Amado emphasizes that, in contrast to decisions defined in terms of data, decisions using Amado are defined in terms of "structured databases of diagnostics" (see Amado at column 20, lines 16 through 19). Sayad does not attempt to provide an "executive information system" (EIS). Rather, results are presented as data. Any decisions are expected to be made from the presented data.

Amado also makes the point that neural nets, genetic algorithms, classifier systems, etc. may be integrated into Amado to "generate diagnostics" needed by Amado (see Amado at column 67, lines 35 through 59, for example). Amado does not, for example, attempt to improve the performance of the neural nets, genetic algorithms, classifier system algorithms themselves. Rather, its emphasis is on using the output of these data analysis methods to obtain diagnostics which can be used together with other diagnostics to provide a comprehensive information picture.

It is noted from all of the above that Amado and Sayad focus on different problems: Sayad is concerned with improving performance of data analysis methods while Amado is concerned with using a variety of diagnostics, some of which may be obtained from data analysis methods, to provide comprehensive information.

The inventions are complementary in that the improved methods obtained by application of the Sayad invention may be used as a source of diagnostics for the Amado invention.

Sayad mentions a list of specific data analysis methods that can be upgraded to intelligent modeling methods from being conventional modeling methods (see Sayad at paragraph 0106). This greatly improves the capability of these methods to provide accurate predictions, especially in dynamic situations involving large quantities of data. The "robust Bayesian classification" method could, for example, be used in Amado (as could any of the methods mentioned in Amado at column 67, lines 35 through 59), to produce much more accurate diagnostics than would otherwise be obtainable in such situations. Note that the list provided by Sayad (at paragraph 106) does not include some of the methods that Amado

mentions (e.g. neural nets, genetic algorithms) since Amado only requires methods to supply diagnostics. However, the present invention has application beyond the specific methods cited in Amado that may have application for providing input to diagnostics. That is, the two inventions are directed at different objectives.

Claims 1, 10, 11, 12, 13, 14, 16, 17, 21

The Examiner stated that Amado anticipates a computer linked to one or more data sources adapted to provide to the computer a plurality of knowledge elements (knowledge elements are synonymous with the rules of a knowledge base); and an analytical engine, linked to or executed by the computer, that is operable to enable intelligent modeling, by the analytical engine applying one or more intelligent characteristics to one or more of the plurality of knowledge elements, the intelligent characteristics including one or more of (i) immediately utilizing new data, (ii) purposefully ignoring certain data, (iii) incorporating new variables, and/or (iv) not using specific variables wherein the analytical engine includes a data management system for accessing and processing the knowledge elements (analytic engine is synonymous with expert system and associated inference engine; such expert system will immediately utilize new data in an if-then rule and through such rule will then ignore, incorporate and/or not use specific variables; Fig. 1 is a DBMS; subdividing is equivalent to distributed data of Fig. 1; combining of the knowledge entities occurs in the application of the if-then rules... similar knowledge entities will have similar rules; prediction is inherent in application of if-then rules... the "if" is the present and the "then" is the prediction; variable reduction occurs with the application of the if-then-rules which would gather similar but slightly different "if" conditions and assign the same "then"... reducing the number of variables; Fig. 1 anticipates a querying engine; the application of if-then rules is synonymous with applying the intelligent modeling to the single knowledge entity).

Agent for Applicant respectfully submits that (i) knowledge elements are not synonymous with the rules of a knowledge base; (ii) the analytic engine is not synonymous with "conventional" expert system and associated inference engine; and (iii) application of if-then rules is not synonymous with applying the intelligent modeling to the single knowledge entity.

(i) Knowledge elements are not synonymous with the rules of a knowledge base

Amado is concerned with how many components are used together to provide an executive information system whereas Sayad is concerned with the development of one or more unique components by means of the specific intelligent modeling technology described. Sayad does not examine how these components are best used together.

This is illustrated in Figure 1 of Amado. Element 6 is composed of several possible components including "Knowledge rules, neural nets, fuzzy logic, GAs".

Sayad could provide one of these components as an intelligent model. Sayad is concerned with the best way of formulating that model. Amado could be used to apply data produced by means of the present invention to create diagnostics then for example use this data in conjunction with the "Querying Engine" as shown in Figure 1 of Amado.

In Figure 2 of Sayad we can see that the output of Sayad is a prediction, as an example. The architecture described by Amado in Figure 1 is completely absent. This becomes even clearer when the "Knowledge Entity" of Figure 3 of Sayad is examined. The summations, etc. shown are clearly not the same as knowledge rules as per Amado. These summations etc. are the building blocks for the Sayad intelligent model. They must be properly utilized by the analytical engine to generate that model.

(ii) The analytic engine is not synonymous with a "conventional" expert system and associated inference engine

The analytic engine is defined by Sayad in a very specific way (see Sayad at paragraph 19 for example). In particular, a conventional data management system is not able to carry out all of the functions demanded by Sayad. Special manipulations of the knowledge elements are part of the requirement.

Throughout the specification, Sayad refers to a "learner", "modeler" and a "predictor". For example in reference to Figure 2 of Sayad, the data management system is a special system tailored to accomplish the needed tasks for the Analytical Engine. It is different in parts; coupling and purpose from the "Executive Information System" (EIS) mentioned by Amado, for example.

(iii) Application of if-then rules is not synonymous with applying the intelligent modeling to the single knowledge entity

Analysis rules are vital to Amado. These rules are tests applied to the data and always result in a "True" or "False" result (see Amado at column 35, lines 30-45).

In Amado, each "true" result is linked to a diagnostic statement in the diagnostic database.

Sayad does not employ such rules. It simply provides the resulting quantities from use of the intelligent model. Someone using Amado with Sayad could attempt to transform the intelligent model obtained by Sayad to a series of rules. However, such attempts would not assist integration of Sayad into Amado. Also, changing the Sayad model in such a way does not mean that it becomes part of Amado any more than rephrasing in terms of rules any of the other methods mentioned (see Amado at column 67, lines 35 through 59, for example) would make them part of the Amado invention.

Therefore, Applicant respectfully submits that claims 1, 10, 11, 12, 13, 14, 16, 17, and 21 are in allowable form.

Claims 2, 22

The Examiner stated that Amado anticipates the analytical engine defining one or more knowledge entities, each of which is comprised of at least one knowledge element (expert system identifies a rule if-then and the knowledge element results from the "then" condition).

Agent for Applicant respectfully submits that the knowledge element does not result from the expert system. Amado defines an expert system in a very general way at column 2, lines 50 through 65. It may be possible to sometimes transform the entire method invented by Sayad (not just the Analytical Engine) into a set of rules. By Amado's definition of an expert system, it may also be possible to then term the Sayad invention as an "unconventional" expert system dedicated to data analysis and prediction for example. However, this still does not result in anticipation by Amado. Amado does not disclose any expert system and certainly does not disclose an expert system implemented using the technology described in Sayad. In fact, Amado provides many examples of commercial expert systems. Rather, it is the integration of expert systems in a computer system in a particular way that is claimed. Sayad does not attempt to specify how his invention should be used in the "macro-system" envisioned by Amado.

Therefore, Applicant respectfully submits that claims 2 and 22 are in allowable form.

Claims 3, 23

The Examiner stated that Amado anticipates the analytical engine adapted to update dynamically the knowledge elements with a plurality of records and a plurality of variables (expert system identifies a rule if-then and the knowledge element results from the "then" condition).

Agent for Applicant respectfully submits that the knowledge element does not result from the expert system. As mentioned above, the definition of the knowledge elements and their updating so as to obtain a model which is continuously and "instantaneously" updated is part of Sayad and not anticipated by Amado.

In examining how often Amado's system is updated, Amado admits to not being able to respond "on-the-fly": Amado contrasts its invention with existing EIS systems providing a few diagnostics on the fly (see Amado at column 26, lines 50 through 67). The Sayad invention, although not an EIS system, provides its information "on the fly". In any event, as detailed above, the Amado and Sayad inventions are dealing with different systems for different purposes.

Therefore, Applicant respectfully submits that claims 3 and 23 are in allowable form.

Claims 9, 29

The Examiner stated that Amado anticipates the analytical engine enabling application to the knowledge entity of one or more of: incremental learning operations, parallel processing operations, scenario testing operations, dimension reduction operations, dynamic query operations or distributed processing operations.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore these aspects of Sayad are not anticipated by Amado. Therefore, Applicant respectfully submits that claims 9 and 29 are in allowable form.

Claim 15

The Examiner stated that Amado anticipates the step of successively applying a series of new variables so as to accomplish further dimension reduction.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore Claim 15 is not anticipated by Amado. Therefore, Applicant respectfully submits that claim 15 is in allowable form.

Claim 18

The Examiner stated that Amado anticipates a) enabling one or more records to be added or removed dynamically to or from the knowledge entity; b) enabling one or more variables to be added or removed dynamically to or from the knowledge entity; c) enabling use in the knowledge entity of one or more qualitative and/or quantitative variables; and d) supporting a plurality of different data analysis methods.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore Sayad is not anticipated by Amado. In addition, Amado does not disclose a "knowledge entity" as disclosed by Sayad in part because no intelligent modelling method is described in Amado, but rather the use of the results of application of such a method. Therefore, Applicant respectfully submits that claim 18 is in allowable form.

Claim 19

The Examiner stated that Amado anticipates the knowledge entity being portable to one or more remote computers.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore Claim 19 is not anticipated. Therefore, Applicant respectfully submits that claim 19 is in allowable form.

Claim 20

The Examiner stated that Amado anticipates the intelligent modeling applied to relevant knowledge elements enables one or more of: a) credit scoring; b) predicting portfolio value

from market conditions and other relevant data; c) credit card fraud detection based on credit card usage data and other relevant data; d) process control based on data inputs from one or more process monitorying devices and other relevant data; e) consumer response analysis based on consumer survey data; f) health care diagnosis based on patient history data, patient diagnosis best practices data, and other relevant data; g) security analyis predicting the identity of a subject from biometric measurement data and other releveant data; h) inventory control analysis based on customer behaviour data, economic conditions and other relevant data; i) sales prediction analysis based on previous sales, economic conditions and other relevant data; j) computer game processing whereby the game strategy is dicatated by the previous moves of one or more other playters and relevant data; k) robot control whereby the movements of a robot are controlled based on robot monitoring data and other relevant data; and l) a customized travel analysis whereby the favourite destination of a customer is predicted based on previous behaviour and other relevant data.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above. Therefore, Applicant respectfully submits that claim 20 is in allowable form.

Claim 30

The Examiner stated that Amado anticipates the analytical engine enabling process control.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore claim 30 is not anticipated by Amado. Therefore, Applicant respectfully submits that claim 30 is in allowable form.

Claim 31

The Examiner stated that Amado anticipates the analytical engine enabling fault diagnosis.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore

claim 31 is not anticipated by Amado. Therefore, Applicant respectfully submits that claim 31 is in allowable form.

Claim 32

The Examiner stated that Amado anticipates the method implemented in a digital signal processor chip or any miniaturized processor medium.

Agent for Applicant respectfully submits that the Amado and Sayad inventions are directed toward different systems for different purposes, as explained above, and therefore claim 32 is not anticipated by Amado. Therefore, Applicant respectfully submits that claim 32 is in allowable form.

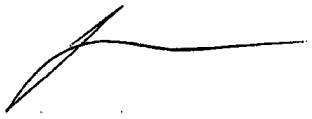
CONCLUSION:

In view of the foregoing amendments and remarks, the application is believed to be in condition for allowance and a notice to that effect is respectfully requested.

Should the Examiner not find the application to be in allowable condition or believe that a conference call would be of value in expediting the prosecution of the application, Applicant requests that the Examiner telephone the undersigned Counsel to discuss the case.

Applicant requests an opportunity to submit any Supplemental Amendment that might advance prosecution and place the application in allowable condition.

Yours faithfully,



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